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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,557	05/26/2005	Dietrich Mund	2133.062USU	4190
27623 7590 06/28/2007 OHLANDT, GREELEY, RUGGIERO & PERLE, LLP ONE LANDMARK SQUARE, 10TH FLOOR STAMFORD, CT 06901			EXAMINER WILCZEWSKI, MARY A	
			ART UNIT 2822	PAPER NUMBER
			MAIL DATE 06/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/511,557

Applicant(s)

MUND ET AL.

Examiner

M. Wilczewski

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-34 and 37-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-34 and 37-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 15 October 2004; 20 June 2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office action is in response to the Preliminary Amendment filed on October 15, 2004. Claims 1-3, 5-34, and 37-40 are pending in the application.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 39 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kobori et al., EP 0 280 905.

Kobori et al. disclose a process for joining at least two silicon substrates to manufacture pressure sensor units by providing a first substrate (10); producing a plurality of nested frame joining elements (32) on a first surface of the first substrate; providing a second substrate (12); and joining the first and second substrates by the plurality of nested frame joining, see column 4, lines 25-58, column 5, line 5, bridging column 6 to line 32, and figures 1-7.

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Claims 40 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kobori et al., EP 0 280 905.

Kobori et al. disclose a composite element including pressure sensor units comprising a first substrate (10); a joining elements (32) on a first surface of the first substrate; a second substrate (12), the first and second substrates being joined by the joining element; and a plurality of nested frames being provided as the joining element, see figures 1-7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-18 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobori et al., EP 0 280 905, cited by Applicants.

Kobori et al. disclose a process for joining at least two silicon substrates to manufacture pressure sensor units by providing a first substrate (10); producing a joining element (32) in the form of a frame on a first surface of the first substrate, the frame made of a binary system of materials or glass (a borosilicate glass); providing a second substrate (12); and joining the first and second substrates by the joining element by anodic bonding, see column 4, lines 25-58, column 5, line 5, bridging column 6 to line 32, and figures 1-7. Kobori et al. disclose that after joining the bonded wafers are

diced, see column 7, lines 3-22. Kobori et al. disclose the process used to form the joining element in figures 8(a)-8(g). Formation of photoresist layer 64 shown in figure 8(c) is deemed to planarize one surface of the joining element, since after formation of resist 64 the surface of substrate 10 on which the borosilicate glass 32 is formed is made planar or flat. As shown in figure 1, the joining element 32 comprises a plurality of nested frames.

Kobori et al. teaches that the borosilicate glass that comprises the joining element is formed by sputtering (column 4, lines 47-51). Kobori et al. lack anticipation only of forming the borosilicate glass by evaporation. Choi et al. disclose a method of anodically bonding two silicon wafer using a borosilicate glass formed by evaporation, see the abstract. Choi et al. disclose that the evaporation coating of borosilicate glass permits high deposition rates with very little surface roughness, and further disclose that a borosilicate glass formed by evaporation has high bonding strength, therefore, it would have been obvious to one skilled in the art to form the borosilicate glass joining element formed in the known method of Kobori et al. by evaporation coating.

Claims 19-34 and 38 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kobori et al., EP 0 280 905.

Kobori et al. disclose a composite element including pressure sensor units comprising a first substrate (10); a joining element (32) on a first surface of the first substrate, the joining element being a frame made of a binary system of materials or glass (borosilicate glass); a second substrate (12), wherein the first and second

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substrates are joined or bonded by the joining element so that a cavity is formed between the first and second substrates; see figures 1-7.

Independent claims 19 and 34, and 38, recite that the glass layer is applied by evaporation coating. Kobori et al. teach to form the borosilicate glass by sputtering (column 4, lines 47-51). However, the present claims are product claims, Applicants have merely chosen to define the claimed product by the process by which it was made. Kobori et al. teach a product that appears to be the same as, or an obvious variant of, the product set forth in the product-by-process claims of the instant application although produced by a different process. See *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983); *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985); and *In re Brown* 173 USPQ 685, 688 (CCPA 1972). It has been well established that process limitations cannot impart patentability to an old/obvious product. Process limitations in a product claim are only significant to the extent that they distinguish the claimed product over the prior art product. Once a product appearing to be substantially identical is found a 35 U.S.C. 102 /103 rejection is made, the burden shifts to the Applicants to show an unobvious difference between the claimed product and that of the prior art. Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983).

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Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobori et al., EP 0 280 905, as applied to claim 1 above, and further in view of Black et al., US Patent 4,426,768.

Kobori et al. is applied as above. Kobori et al. disclose the photolithographic patterning of borosilicate glass 32, see figures 8(c)-8(e) and column 7, lines 41-52. However, it is known to use a lift-off technique to pattern borosilicate glass layers in the fabrication of pressure sensors, see Black et al., figure 6 and column 4, lines 17-41. It would have been obvious to one skilled in the art that the lift-off technique taught by Black et al. could have been substituted for the photolithographic patterning step of Kobori et al., since the prior art teaches the functional equivalence of the two techniques to pattern borosilicate glass layers in pressure sensors.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additionally cited references disclose the bonding of at least two substrates to form a cavity therebetween.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Wilczewski whose telephone number is (571) 272-1849. The examiner can normally be reached on Monday-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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